

ABSTRACT OF THE DISCLOSURE

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In an optical transmission system, a multiplexer frequency-division-multiplexes a plurality of signals, and outputs the resultant signal to an FM modulator. The FM modulator converts the frequency-division-multiplexed signal into an FM modulated signal through frequency modulation using the frequency-division-multiplexed signal as an original signal. A frequency-divider converts the FM modulated signal into a frequency-divided FM modulated signal whose frequency is $1/2^n$ (n is an integer of not less than 1) the frequency of the FM modulated signal. An optical modulator has a predetermined input-voltage vs. output-optical-power characteristic, and is biased at the minimum point (voltage) about the output optical power. The optical modulator modulates an unmodulated light fed from a light source with the applied frequency-divided FM modulated signal to produce an optical signal whose optical carrier component is suppressed, and sends the optical signal to an optical transmission line. An optical receiver receives the optical signal, and square-law detects the signal to convert into an FM modulated signal. A FM demodulator demodulates the FM modulated signal to reproduce the original frequency-division-multiplexed signal. This configuration makes it possible to narrow the bandwidth of an FM modulated signal while increasing the frequency deviation thereof, and realize high-quality signal transmission as a result.